

	SUN	MON	TUES	WED	THURS	FRI	SAT
WEEK 1			May 28	May 29	May 30	May 31	June 1
8:30 am				<p>Students' arrival at BNL all day</p> <p>Security/Housing</p> <p>(Check into Housing & Begin GUV Center processing if possible)</p> <p>Commence: Training Audit, Obtain BNL Photo IDs & Computer Access Cash Checks at Credit Union (if needed)</p>	NASA Summer School Opening		FREE TIME
9:00 am			Continue: Training Audit, Obtain BNL Photo IDs & Computer Access Cash Checks at Credit Union (if needed)		NSRL Facility Radiobiology Users Training: 9-10:30am Iris scans and TLDs from 10:30-12 noon (Building 911 Snyder Seminar Room)		
10:00 am							
11:00 am							
12:00 pm					LUNCH	LUNCH	
12:30 pm						1:00 – 2:00 pm BNL Tour +Group Photo (Tara Shiels) Start at Medical, Bld 490	
2:00 pm					<p><u>Radiological Worker Classroom Training and Exam: 2-4:30 pm</u></p> <p><u>Medical Building</u></p>	Complete iris scans and issuing of TLDs (if needed)	
3:00 pm						Elementary Reviews of Physics and Biology (L&D Goodhead, Nelson)	
3:30 pm			D.Goodhead, L.Goodhead, K. Buckaloo Arrival at BNL				
5:00 pm					5:30 pm Student Welcome / BBQ – Brookhaven Center Patio Catered		

	SUN	MON	TUES	WED	THURS	FRI	SAT
Week 2	June 2	June 3	June 4	June 5	June 6	June 7	June 8
8:30 am (8:30-9:00)	FREE TIME	Medical Dept. DG/LG/PG/BW Welcome & Program Goals	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	FREE TIME
9:00 am (9:00-10:05)		NASA's Mission & Roadmap (Cucinotta)	Radiobiology 2 (Hall)	Heavy Ions and Shielding Physics, including Neutrons (Heilbronn)	Chromosome Rearrangements (Morgan)	Biology Experiment Overview for 6/4 (Kronenberg/Guida) & Biology Review (Kronenberg)	
10:05 am (10:05-11:10)		What is Radiation? (Borak)	PhysicsTool Kit (Nelson)		Mutagenesis (Kronenberg)		
11:10 am		<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	
11:25 am (11:25-12:30)		Radiation Interactions with Matter (Borak)	Physics Chalk Talk/problems	Physics Homework/ problems (Heilbronn/L.Goodhead)	Radiosensitivity and Cell Cycle (Joiner)	Radiation-induced Instability (Kronenberg)	
12:30 pm		<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	
1:30 pm (1:30-2:35)		Introduction to Radiation Dosimetry (Borak)	Radiation Chemistry & DNA Damage (Held)	1:30-3:00 Programmed Cell Death (Kronenberg)	Effects on Embryo, Fetus, Transgenerational (Joiner)	Track Structure 1 (D.Goodhead)	
2:35 pm		<i>Break</i>	<i>Break</i>		<i>Break</i>	<i>Break</i>	
2:50 pm (2:50-3:55)		Radiobiology I (Hall)	Dose responses, LET & RBE (Held)	3:00 <i>Break</i>	Dose Rate Effects (Joiner)	Accelerators (Lowenstein)	
3:55 pm (3:55-5:00)		Principles of Radiation Protection (Borak)	Radiation detection methods (Borak/Heilbronn)	3:15 DNA Repair (Iliakis)	Systems Biology of Radiation (Morgan)	NSRL Dosimetry (Rusek)	
5:00 pm	Faculty Panel	Faculty Panel	Faculty Panel		Faculty Panel	Faculty Panel	
5:30 pm	7:00 pm Evening Activity with G. Nelson	6:00 – 7:30 pm Faculty Reception – Large Conference Room -- Catered	End	End	End	End	

	SUN	MON	TUES	WED	THURS	FRI	SAT	
WEEK 3	June 9	June 10	June 11	June 12	June 13	June 14	June 15	
8:30 am (8:30-9:00)		Medical Dept. Daily Briefing	LAB DAY - NSRL (Kronenberg & Guida)	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	8:30-11:30 <u>8:30 All start at NSRL</u> <u>First ½ Stay at NSRL</u> for LAB Day - NSRL (Rusek) with Beam Time <u>Second ½ at Medical</u> <u>Work on Beam Time</u> <u>Proposals, etc.</u>	FREE TIME	
9:00 am (9:00-10:05)		Space Radiation Environment (Zeitlin)	Beam Time 9:00 – 2:00	Animal Studies (Weil)	3D Cell Culture Models (Shay)			
10:00 am (10:05-11.10)		Accelerator Physics and Space Simulation (Zeitlin)		Genetics of Animal Studies (Weil)	Biol Countermeasures For Radiation Protection (Shay)			
11:10 am		Break	Break	Break	Break			
11:25 am (11:25-12:30)		Radiation-Induced Cell Signaling (Boothman)	LAB	Space Radiation Protection (Schimmerling)	11:30-12:30 Visit to Tandem Van de Graaff (Chuck Carlson)			
12:30 pm		Lunch	Lunch	Lunch	Lunch			11:30-11:45 Return to Medical Dept.
1:30 pm (1:30-2.35)		Low-LET Reference Radiation (Sivertz)	LAB	Leukemia (Weil)	1:30 – 4:30 pm: LAB In 2 Groups: 1. Flow Cytometry (Guida) 2. DNA Damage, etc. (Kim)			11:45-1:00 Track Structure 2 (D.Goodhead)
2:35 pm		Break	Break	Break				1:00-2:30 Lunch
2:50 pm (2.50-3.55)		Acute Effects (Kennedy)	LAB	Beam Time Proposals Homework, Questions	Experimental Plan for Tomorrow (Rusek/Guida)			2:30-5:00 <u>Second ½ at NSRL</u> For LAB Day - NSRL (Rusek) with Beam Time <u>First ½ at Medical</u> <u>Work on Beam Time</u> <u>Proposals, etc.</u>
3:55 pm (3:55-5:00)		Epigenetics (Turker)	Non-targeted Effects (Azzam)	High/Low LET Microbeams (Randers- Pehrson)				Faculty Panel
5:00 pm		Faculty Panel	Faculty Panel	Faculty Panel		Faculty Panel		
5:30 pm		End	End	End	End	End		

	SUN	MON	TUES	WED	THURS	FRI	SAT
WEEK 4	June 16	June 17	June 18	June 19	June 20	June 21	June 22
8:30 am (8:30-9:00)	FREE TIME	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	Medical Dept. Daily Briefing	DEPARTURE
9:00 am (9:00-10:05)		NSRL Simul(GERMcode) (Cucinotta)	Omics Technologies (Story)	CNS Effects (O'Banion)	Chemical Kinetics in Systems Biology (Cucinotta)	Review Of Beam Time Proposals (5 min presentation +feedback)	
10:05 am (10:05-11:10)		Tool Kit Practical (Nelson)	Space Flight Measurements (Nelson)	Transgenic Models and New Imaging approaches (Kirsch)	Radiation Quality & Risk Models (Cucinotta)	Review Of Beam Time Proposals (contd)	
11:10 am		<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	
11:25 am (11:25-12:30)		RITRACKS Track structure Simulations (Plante)	Microgravity Effects (Nelson)	Cancer Stem Cells (Kirsch)	Cataracts (Ellie Blakely)	Review Of Beam Time Proposals (contd)	
12:30 pm		<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	
1:30 pm (1:30-2:35)		Beam Time Proposals (Nelson)	Cardiovascular Effects (O'Banion)	Review Time (Nelson & Cucinotta)	Heavy Particle Therapy (Ellie Blakely)	Student Team Ppt Presentations (~20 min each)	
2:35 pm		<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>		
2:50 pm (2:50-3:55)		Haematopoietic & Immune Response (Nelson)	Neurogenesis (Fike)	LAB TIME	Prepare Final Presentations. <u>Beam Time Proposals Due</u>	<i>Break</i>	
3:55 pm (3:55-5:00)		Beam Time Proposals (Nelson)	Radiation Effects on Neurons & Stem Cells (Fike)	Work On Presentations	Faculty Panel	Closing Ceremony Large Conf Room Catered	
5:00 pm		Faculty Panel	Faculty Panel	7 – 10 PM Dinner Banquet Catered		End	
5:30 pm		End	End		End		